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USER MANUAL

CEP7
Second Generation PROFIBUS Module

CATALOG NUMBER CEP7-EPRB

Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. *Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls* (Publication SGI-1.1 available from your local Rockwell Automation sales office or online at http://www.ab.com/manuals/gi) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary we use notes to make you aware of safety considerations.

WARNING

Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

ATTENTION

Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you:

- identify a hazard
- avoid a hazard
- recognize the consequence

SHOCK HAZARD

Labels may be located on or inside the equipment (e.g., drive or motor) to alert people that dangerous voltage may be present.

BURN HAZARD

Labels may be located on or inside the equipment (e.g., drive or motor) to alert people that surfaces may be dangerous temperatures.

Installation and Wiring

Introduction

The purpose of this chapter is to provide the necessary instructions to successfully install a CEP7-EPRB PROFIBUS Module to an CEP7 Second Generation Overload Relay and properly connect to a PROFIBUS network.

ATTENTION

To prevent electrical shock, disconnect from power source before installing or servicing. Install in suitable enclosure. Keep free from contaminants.

ATTENTION

The side mount module contains ESD (electrostatic discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing, or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, refer to Rockwell Automation publication 8000-4.5.2, "*Guarding Against Electrostatic Damage*", or any other applicable ESD protection handbook.

ATTENTION

The purpose of this document is to serve as a guide for proper installation. The National Electrical Code and any other governing regional or local code will take precedence. Rockwell Automation cannot assume responsibility for the compliance or proper installation of the side mount module or associated equipment. A hazard of personal injury and/or equipment damage exists if codes are ignored during installation.

ATTENTION

An incorrectly applied or installed side mount module can result in damage to the components or reduction in product life. Wiring or application errors such as supplying incorrect or inadequate supply voltage, or operating/storing in excessive ambient temperatures may result in malfunction of the product.

ATTENTION

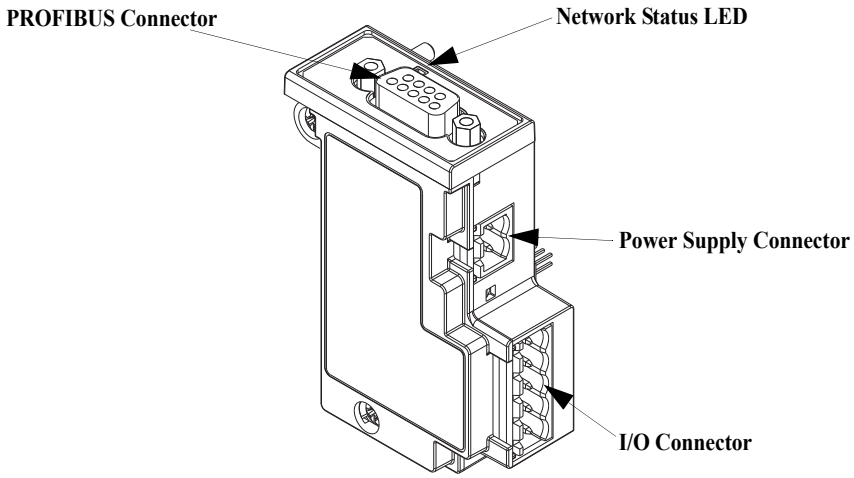
Only personnel familiar with the side mount module and associated machinery should plan to install, set up, and maintain the system. Failure to comply may result in personal injury and/or equipment damage.

ATTENTION

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take adequate measures.

Features

Figure 1.1 Features



Installation

Figure 1.2 Installation [1]

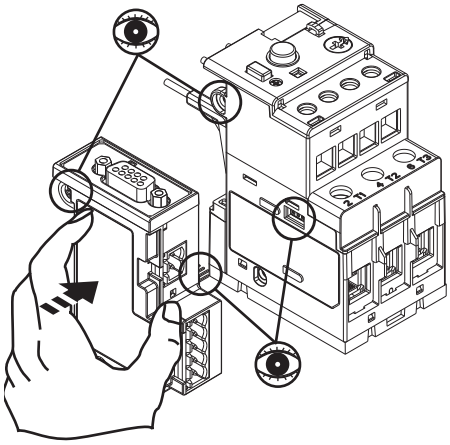


Figure 1.3 Installation [2]

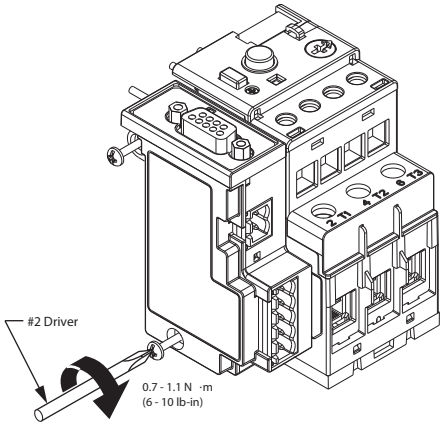
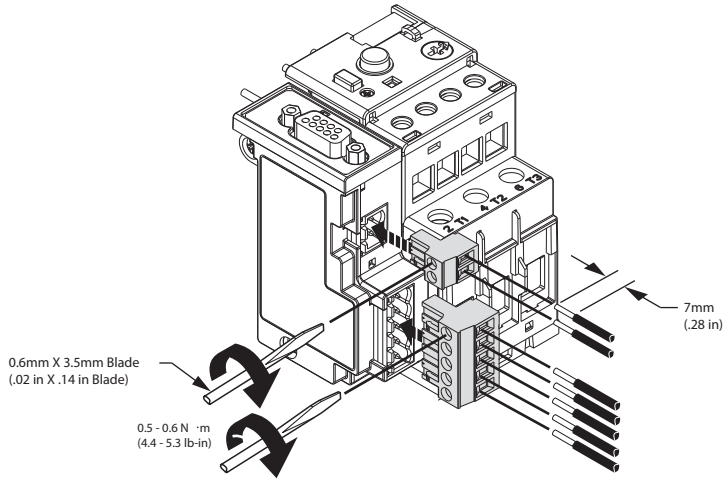


Figure 1.4 Installation [3]



Wiring

Table 1.1 Wire and Size Torque Specifications

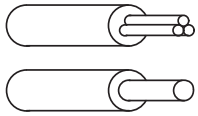
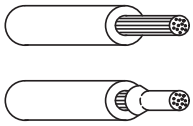
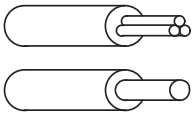
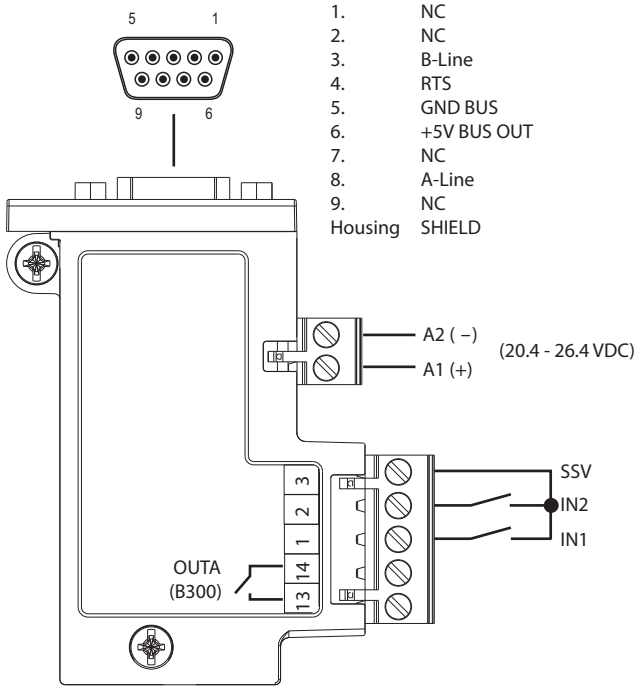
	1X 2X	24…12 AWG 24…16 AWG 5 lb.-in
	1X 2X	0.2…2.5 mm^2 0.25…1 mm^2 0.55 N•m
	1X 2X	0.2…2.5 mm^2 0.2…1 mm^2 0.55 N•m

Figure 1.5 Wiring Diagram



Dimensions

Figure 1.6 Dimension Diagram

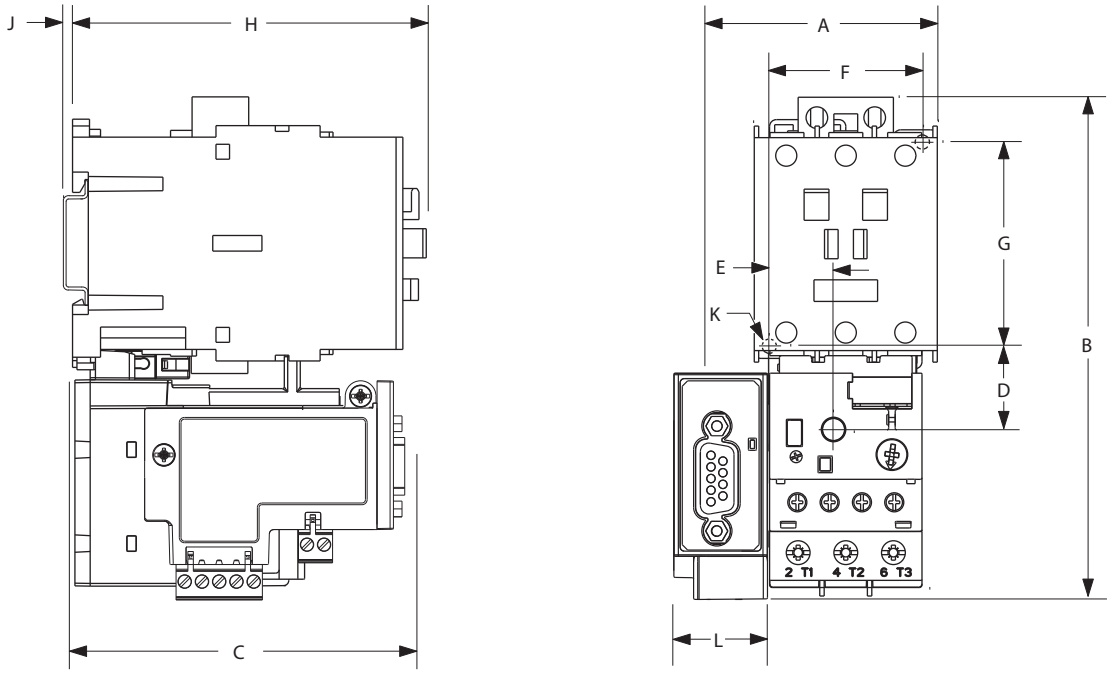


Table 1.2 Dimension Specifications

Contactor Cat. No.	CEP7 Second Gen. Cat. No.		A	B	C	D	E	F	G	H	J	K	L
CA7-9, -12, -16, -23	CEP7-EE_ B	mm (in)	67 (2.64)	148 (5.83)	85.2 (3.35)	24.5 (.96)	13.9 (.55)	35 (1.38)	60 (2.36)	86.5 (3.40)	2 (.08)	4.5 (.17)	22 (.86)
CA7-30, -37	CEP7-EE_ D	mm (in)	67 (2.64)	148 (5.83)	101.2 (3.98)	24.5 (.96)	13.9 (.55)	35 (1.38)	60 (2.36)	104 (4.09)	2 (.08)	4.5 (.17)	22 (.86)
CA7-43		mm (in)	71.5 (2.82)	148 (5.83)	101.2 (3.98)	24.5 (.96)	18.4 (.74)	45 (1.77)	60 (2.36)	104 (4.09)	2 (.08)	4.5 (.17)	22 (.86)
CA7-60, -72, -85	CEP7-EE_ E	mm (in)	94 (3.70)	191.6 (7.54)	120.4 (4.74)	29 (1.14)	23.8 (.94)	55 (2.16)	100 (3.94)	126 (4.94)	2 (.08)	5.4 (.21)	22 (.86)

Protection Functions

Introduction

The purpose of this chapter is to provide detailed information regarding the protective trip and warning functions that the CEP7-EPRB PROFIBUS Module adds to the CEP7 Second Generation Overload Relay. In this chapter, you will find considerable mention given to parameters as they relate to these functions. For complete descriptions of the programming parameters, refer to Chapter 3 - *Profibus Configuration*.

Trip Status / Identification

The PROFIBUS Module determines trip status and identification through monitoring of reference signals inside the CEP7 Second Generation Overload Relay. On power-up, it assumes that the CEP7 Second Generation Overload Relay is in a non-tripped condition. For definitive feedback on trip status of the CEP7 Second Generation Overload Relay, one of the PROFIBUS module inputs may be wired to the N.O. auxiliary contact (terminals 97 and 98) of the CEP7 Second Generation Overload Relay. Parameters 28 and 29 are used to configure the assignment of the inputs. For this function, use the "OL Contact" configuration.

Trip Resetting

The following options are available for resetting a tripped CEP7 Second Generation Overload Relay with a PROFIBUS module:

- Blue mechanical reset button located on the front of the CEP7 Second Generation Overload Relay
- Setting Parameter 19, *Trip Reset*, to "Reset"
- Setting the "Trip Reset"-bit bit in the Control Register
- Using a push button (N.O. contact configuration) wired to one of the PROFIBUS Module inputs, programming the corresponding input assignment parameter (28 or 29) to "Trip Reset"

IMPORTANT Setting parameter 11, *Reset Mode*, to "Automatic" does not result in other reset commands being ignored.

Trip and Warning Enable

Parameter 8, *Trip Enable*, allows the installer to enable or disable the jam trip protective function.

Parameter 9, *Warning Enable*, allows the installer to enable or disable the overload, jam and underload warning protective functions.

ATTENTION The Trip Enable settings should not be altered during machine operation, as unexpected behavior could occur. This may result in an unintended actuation of controlled industrial equipment, with the potential for machine damage or serious injury to personnel.

Overload and Phase Loss Protection

Thermal overload and phase loss trip protection is provided exclusively by the CEP7 Second Generation Overload Relay. The CEP7 Second Generation Overload Relay provides uninterrupted protection to the motor, even in the event of a PROFIBUS Module failure.

Settings for FLA and trip class are found directly on the CEP7 Second Generation Overload Relay.

IMPORTANT The reset mode DIP switch adjustment is overridden by the PROFIBUS module parameter 11, *OL Reset Mode*, while the PROFIBUS module is powered.

Overload Warning

The PROFIBUS Module continuously monitors the CEP7 Second Generation Overload Relay's percentage of thermal utilization signal. Parameter 2,*%Therm Utilized*, provides this value.

Parameter 12, *OL Warning Level*, is used to adjust the setpoint to alert for an impending overload trip and is adjustable from 0…100% TCU.

The PROFIBUS Module will indicate an overload warning if all the following conditions are met:

- No warning currently exists
- Overload warning is enabled
- *%Therm Utilized* is equal to or greater than *OL Warning Level*

When the overload warning conditions are satisfied, the following will occur:

- Bit 0 in Parameter 4, *Warning Status*, will go to "1"
- Bit 1 of Parameter 5, *Device Status*, will go to "1"

IMPORTANT *%Therm Utilized* will stabilize at a value of approximately 88% with the motor operating continuously at rated current.

Jam Protection

Motor current greater than the motor's nameplate rating can indicate a high overload or stall condition, such as an overloaded conveyor or jammed gear. These conditions can result in overheating of the motor, and equipment damage. Rapid jam fault detection helps to minimize damage and loss of production.

By continuously monitoring the motor current level signal as a percentage of the CEP7 Second Generation Overload Relay's dial FLA setting, the PROFIBUS module allows jam trip and warning capability.

Jam Trip

The following parameters are available for configuring the PROFIBUS Module's jam trip performance:

- Parameter 13, *Jam Inhibit Time*, allows the installer to inhibit a jam trip from occurring during the motor starting sequence. It is adjustable from 0…250 seconds.
- Parameter 14, *Jam Trip Delay*, allows the installer to define the time period a jam condition must be present before a trip occurs. It is adjustable from 0.5…25.0 seconds.
- Parameter 15, *Jam Trip Level,* allows the installer to define the current at which the CEP7 Second Generation Overload Relay will trip on a jam. It is user-adjustable from 150…600% of the FLA dial setting.

The PROFIBUS Module will command the CEP7 Second Generation Overload Relay to trip if all the following conditions are met:

- No trip currently exists
- *Jam Protection* is enabled
- *Jam Inhibit Time* has expired
- The motor current is greater than the *Jam Trip Level* for a time period greater than the *Jam Trip Delay*

When the conditions for a jam trip are satisfied, the following will occur:

- Bit 2 in Parameter 3, *Trip Status*, will go to "1"
- Bit 0 in Parameter 5, *Device Status*, will go to "1"
- The CEP7 Second Generation Overload Relay's trip relay contacts (95 and 96) will open
- Out A will be placed in their Protection Fault State (if so programmed)

IMPORTANT The Protection Fault State of OUT A is defined by parameter 22 (*OUTA Pr FltState*) and parameter 23 (*OUTA Pr FltValue*).

IMPORTANT The jam inhibit timer starts after the load current transitions from 0 A to 30% FLA. The PROFIBUS Module does not begin monitoring for a jam condition until the *Jam Inhibit Time* expires.

Jam Warning

Parameter 16, *Jam Warn Level*, allows the installer to define the current at which the PROFIBUS Module will indicate a warning. It is user-adjustable from 100…600% FLA.

The PROFIBUS Module will indicate a Jam warning if:

- No warning currently exists
- Jam Warning is enabled
- Jam Inhibit Time has expired
- The motor current is equal to or greater than the Jam Warn Level

When the Jam Warning conditions are satisfied, the following will occur:

- Bit 2 in Parameter 4, *Warning Status*, will go to "1"
- Bit 1 in Parameter 5, *Device Status*, will go to "1"

IMPORTANT The Jam Warning function does not include a time delay feature. Once the *Jam Inhibit Time* has expired, the Jam Warning indication is instantaneous.

Underload Protection

Motor current less than a specific level may indicate a mechanical malfunction in the installation, such as a torn conveyor belt, damaged fan blade, broken shaft, or worn tool. Such conditions may not harm the motor, however, rapid detection may help to minimize equipment damage and loss of production.

Underload Warning

The following parameters are available for configuring the PROFIBUS Module's underload warning performance:

- Parameter 17, *UL Inhibit Time*, allows the installer to inhibit an underload indication from occurring during the motor starting sequence. It is adjustable from 0…250 seconds.
- Parameter 18, *UL Warn Level*, allows the installer to define the current at which the PROFIBUS Module will indicate a warning. It is user-adjustable from 30…100% of the FLA dial setting.

The PROFIBUS Module will immediately indicate an Underload warning if:

- No warning currently exists
- *Underload Warning* is enabled
- *UL Inhibit Time* has expired
- The motor current is less than the *UL Warn Level*

When the Underload Warning conditions are satisfied, the following will occur:

- Bit 3 in Parameter 4, *Warning Status*, will go to "1"
- Bit 1 of Parameter 5, *Device Status*, will go to "1"

IMPORTANT The Underload Warning function does not include a time delay feature. Once the *UL Inhibit Time* has expired, the Underload warning indication is instantaneous.

Communication Fault Protection

A disruption of the communication link between the CEP7 Second Generation PROFIBUS Module and a PROFIBUS network can result in the loss of application control and/or critical process diagnostic data. Rapid communication fault detection helps minimize potential damage due to uncontrolled or unmonitored applications.

Comm Fault Warning

The PROFIBUS Module will indicate a Comm Fault warning if:

- No warning currently exists
- Comm Fault Warning is enabled
- The PROFIBUS Module experiences a loss of communication

When the Comm Fault warning conditions are satisfied, the following will occur:

- The Network Status LED will go out
- Bit 5 in Parameter 4, *Warning Status*, will go to "1"
- Bit 1 of Parameter 5, *Device Status*, will go to "1"

IMPORTANT The Comm Fault State of OUT A is defined by Parameter 24 (*OUTA Pb FltState*) and parameter 25 (*OUTA Pb FltValue*).

Communication Idle Protection

When a programmable controller is placed into the program mode, the execution of its ladder program is suspended, and any connected networks go to an idle state. If inadvertent, this can result in the loss of application control and/or critical process diagnostic data. Rapid

communication idle detection helps minimize the potential damage due to uncontrolled or unmonitored applications.

Comm Idle Warning

The PROFIBUS Module will indicate a Comm Idle warning if:

- No warning currently exists
- Comm Idle Warning is enabled
- The PROFIBUS module is in idle (clear) mode

When the Comm Idle warning conditions are satisfied, the following will occur:

- Bit 6 in Parameter 4, *Warning Status*, will go to "1"
- Bit 1 in Parameter 5, *Device Status*, will go to "1"

IMPORTANT The Comm Idle State of OUT A is defined by Parameter 26 (*OUTA Pb IdlState*) and parameter 27 (*OUTA Pb IdlValue*).

PROFIBUS Configuration

Introduction

The PROFIBUS Module supports DP-V0 and DP-V1 communications. It is commissioned for a PROFIBUS network using a GSD file which contains information about parameters, profiles, I/O types, and sizes specific for this module. The GSD file for the CEP7-EPRB can be dowloaded from http://www.ab.com/networks/gsd/.

Acyclic Parameter Access (DP-V1)

The preferred way of accessing device parameters is by means of Acyclic (DP-V1) read- and write services. When accessed acyclically, parameters are addressed by their corresponding Index (index equals parameter number). Note that due to technical reasons imposed by the PROFIBUS networking system, it is required to map at least one byte of Cyclic I/O in either direction. Any parameter can be used for this purpose.

Note: The slot number is not significant (i.e. it's ignored by the module)

IMPORTANT Write requests towards writeable parameters will automatically cause the corresponding setting to be saved in non volatile memory. For consistency reasons, all parameters mapped as Cyclic I/O will be read-only when accessed acyclically.

IMPORTANT Changes made to parameter values will take effect immediately even during a "running" status.

IMPORTANT Parameter setting changes made in a PROFIBUS configuration tool do not take effect in the PROFIBUS Module until the installer applies or downloads the new settings to the device.

Cyclic Parameter Access (DP-V0)

All parameters can be accessed cyclically by adding the corresponding GSD-module to the network configuration. GSD-modules can be added (i.e. mapped as Cyclic I/O) as needed, in any order, with a few restrictions:

- At least one byte must be mapped as Cyclic I/O. This can either be device parameters - or - the Control- and Status Registers.
- It is not permitted to map the same parameter to the Cyclic I/O configuration more than once.
- Parameters mapped as Cyclic I/O cannot be written using Acyclic (DP-V1) services.

IMPORTANT For technical reasons, writeable parameters mapped as Cyclic I/O will not be saved automatically in non volatile memory. To save such paramaters, a save operation must explicitly be triggered by means of a bit in the Control Register.

IMPORTANT All changes made to parameter values, saved or not, will take effect immediately even during Data Exchange.

Initial Data

During startup of the network, it is possible to load start-up values (loaded on each transition from offline to online) for all writable parameters by means of the User Prm Data. The PROFIBUS Module will use these settings provided that "Parameter Initialization" (User Prm Data byte #3) is set as "Enabled". Note that this will result in any previous settings stored in non volatile memory to be replaced.

Initial values supplied through the User Prm Data will only be used if all initial parameter values are valid. In case an illegal initial parameter value is specified, an out-of-range parameter error will be signalled to the PROFIBUS master.

The loading of initial data also includes the "Program Lock"-setting, which means that it is possible to specify a default configuration during startup, which will then be protected from write access during runtime.

IMPORTANT Initial values supplied through the User Prm Data will only be used if all initial parameter values are valid. In case an illegal initial parameter value is specified, an out-of-range parameter error will be signalled to the PROFIBUS master.

IMPORTANT Special care has to be taken for parameters mapped as Cyclic I/O, since their value may be overwritten during the first bus cycle. This can be prevented using parameter 20 (*Program Lock)*, however as soon as the Program Lock is disabled, the value of these parameters will be replaced by the corresponding I/O data.

Control- and Status Registers

A special GSD-module (labelled "193-EPRB") is used to house the Control- and Status Registers. These registers controls- and reflects the overall status of the module respectively.

Control Register

The structure controls various aspects of the module as follows:

Table 3.1 Control Register contents

Bit								Function:
7	6	5	4	3	2	1	0	
							X	OutA
					X			Trip Reset
	X							Save
X		X	X	X		X		Not Used

- Bit 0; OutA – Control of the Output relay. The bit is flank triggered, i.e. a state transition from 0 to 1 or from 1 to 0 must be performed to change the state of the relay
- Bit 2; Trip Reset – Same functionality as parameter 19, *Trip Rese*t. The bit is flank triggered, i.e. a state transition from 0 to 1 must be performed to trigger a trip reset.
- Bit 6; Save – Used to trigger a save (to non-volatile memory) of parameter values of parameters that are mapped as Cyclic I/O. The bit is flank triggered, i.e. a state transition from 0 to 1 must be performed to trigger a save operation.

Status Register

The Status Register reflects the overall status of the module as follows:

Table 3.2 Status Register contents

Bit								Function:
7	**6**	**5**	**4**	**3**	**2**	**1**	**0**	
							X	Trip
						X		Warning
					X			OutA Stat
				X				Not Used
			X					Input 1
		X						Input 2
	X							Save Ready
X								Motor Curr.

- Bit 0
  Trip – Same functionality as bit 0 in parameter 5, *Device Status*.

- Bit 1
  Warning – Same functionality as bit 1 in parameter 5, *Device Status*.

- Bit 2
  OutA Stat – Same functionality as bit 2 in parameter 5, *Device Status*.

- Bit 4
  Input 1 – Same functionality as bit 3 in parameter 5, *Device Status*.

- Bit 5
  Input 2 – Same functionality as bit 4 in parameter 5, *Device Status*.

- Bit 6
  Save Ready – Used to indicate that a save of parameter values of parameters mapped as Cyclic I/O has been performed. The bit can be cleared again by clearing the "Save"-bit in the Control Register.

- Bit 7
  Motor Current – Same functionality as bit 5 in parameter 5, *Device Status*.

Parameter Programming

Program Lock

Parameter 20, *Program Lock*, provides a degree of security from having parameter settings unintentionally altered when programmed to the "locked" setting.

If enabled, all parameters except *Program Lock* (20) are protected from acyclic (DP-V1) write access, and any changes made to the value of parameters mapped as Cyclic I/O will be ignored. The "Program Lock" parameter will, if mapped as Cyclic I/O, be processed prior to processing other parameters mapped as Cyclic I/O. The loading of initial data is not affected by the Program Lock.

Resetting to the Factory Default Values

Parameter 25, *Set to Defaults*, allows the installer to reset all parameter settings (including trip logs) to the factory default values.

IMPORTANT Resetting to factory default values also resets the node address of the PROFIBUS module to its default value of 126.

Parameter Group Listing

The CEP7-EPRB PROFIBUS Module contains six parameter groups:

Table 3.3 Parameter Groups

Monitor parameters	Advanced Setup	Reset/Lock	I/O Setup	Trip History	PROFIBUS Setup
1 Average %FLA	**8** Trip Enable	**19** Trip Reset	**22** OutA Pr FltState	**30** Trip Log 0	**35** SSA Node Address
2%Therm Utilized	**9** Warning Enable	**20** Program Lock	**23** OutA Pr FltValue	**31** Trip Log 1	
3 Trip Status	**10** Single/Three Ph	**21** Set to Defaults	**24** OutA Pb FltState	**32** Trip Log 2	
4 Warning Status	**11** OL Reset Mode		**25** OutA Pb FltValue	**33** Trip Log 3	
5 Device Status	**12** OL Warning Level		**26** OutA Pb IdlState	**34** Trip Log 4	
6 Firmware Revision	**13** Jam Inhibit Time		**27** OutA Pb IdlValue		
7 Serial Number	**14** Jam Trip Delay		**28** IN1 Assignment		
	15 Jam Trip Level		**29** IN2 Assignment		
	16 Jam Warn Level				
	17 UL Inhibit Time				
	18 UL Warn Level				

Monitor Group

Average %FLA	**Index No.**	**1**
This parameter reports the average motor current. The value is reported as a percentage of motor rated current (dial setting on the CEP7 Second Generation Overload Relay), and is reported in increments of 5.	Access Rule	Read
	Size	2 bytes
	Group	Monitor
	Units	%FLA
	Min. Value	0
	Max. Value	1275
	Default Value	None

% Therm Utilized	**Index No.**	**2**
This parameter reports the percent thermal utilization of the connected motor.	Access Rule	Read
	Size	1 byte
	Group	Monitor
	Units	%
	Min. Value	0
	Max. Value	100
	Default Value	None

Trip Status	**Index No.**	**3**
This parameter provides trip identification. 1 = Trip 0 = No Trip	Access Rule	Read
	Size	2 bytes
	Group	Monitor
	Units	—
	Min. Value	—
	Max. Value	—
	Default Value	None

Bit																**Function:**
15	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**	
															X	Overload
														X		Phase Loss
													X			Jam
X	X	X	X	X	X	X	X	X	X	X	X	X				Not Used

Warning Status	**Index No.**	**4**
This parameter provides warning identification 1 = Warning 0 = No Warning	Access Rule	Read
	Size	2 bytes
	Group	Monitor
	Units	—
	Min. Value	—
	Max. Value	—
	Default Value	None

Bit																**Function:**
15	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**	
															X	Overload
														X		Not Used
													X			Jam

Bit																Function:
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
												X				Underload
											X					Not Used
										X						Comm Fault
									X							Comm Idle
								X								Nonvolatile Memory Fault
X	X	X	X	X	X	X	X									Not Used

Device Status	Index No.	5
This parameter provides status information related to the CEP7 Second Generation Overload Relay and the PROFIBUS Module. 1 = On or Present 0 = Off or Not Present	Access Rule	Read
	Size	2 bytes
	Group	Monitor
	Units	—
	Min. Value	—
	Max. Value	—
	Default Value	None

Bit																Function:
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
															X	Trip
														X		Warning
													X			Out A
												X				In 1
											X					In 2
										X						Motor Current
X	X	X	X	X	X	X	X	X	X							Not Used

Firmware Revision	Index No.	6
This parameter reports the firmware revision of the PROFIBUS Module. Format: 0x0107 equals version 1.07	Access Rule	Read
	Size	2 bytes
	Group	Monitor
	Units	—
	Min. Value	0
	Max. Value	65535
	Default Value	None

Serial Number	Index No.	7
This parameter reports the serial number assigned during production of the PROFIBUS Module.	Access Rule	Read
	Size	4 bytes
	Group	Monitor
	Units	—
	Min. Value	0
	Max. Value	0xFFFFFFFF
	Default Value	None

Advanced Setup Group

Trip Enable	**Index No.**	**8**
This parameter allows the installer to enable or disable the Jam Trip function 1 = Enabled 0 = Disabled	Access Rule	Read/Write
	Size	2 bytes
	Group	Advanced Setup
	Units	—
	Min. Value	0000000000000000
	Max. Value	0000000000000100
	Default Value	0000000000000000

Bit																**Function:**
15	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**	
															X	Not Used
														X		Not Used
													X			Jam
X	X	X	X	X	X	X	X	X	X	X	X	X				Not Used

Warning Enable	**Index No.**	**9**
This parameter allows the installer to enable or disable the warning functions separately. All warning functions are disabled from the factory. 1 = Enabled 0 = Disabled	Access Rule	Read/Write
	Size	2 bytes
	Group	Advanced Setup
	Units	—
	Min. Value	0000000000000000
	Max. Value	0000000001101101
	Default Value	0000000000000000

Bit																**Function:**
15	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**	
															X	Overload
														X		Not Used
													X			Jam
												X				Underload
											X					Not Used
										X						Comm Fault
									X							Comm Idle
X	X	X	X	X	X	X	X	X								Not Used

Single/Three Ph	**Index No.**	**10**
This parameter configures the PROFIBUS Module for single- or three-phase application. This parameter should be set to "Single Phase" when CEP7S devices are employed.	Access Rule	Read/Write
	Size	1 byte
	Group	Advanced Setup
	Units	—
	Min. Value	0 = Single-Phase
	Max. Value	1 = Three-Phase
	Default Value	1

OL Reset Mode	**Index No.**	**11**
This parameter defines whether a trip can be automatically or manually reset. This setting overrides the CEP7 Second Generation DIP switch adjustment while the PROFIBUS Module is powered. Note, however, that the CEP7 Second Generation manual reset button, accessible at the front, is always active.	Access Rule	Read/Write
	Size	1 byte
	Group	Advanced Setup
	Units	—
	Min. Value	0 = Manual
	Max. Value	1 = Automatic
	Default Value	0

OL Warning Level	**Index No.**	**12**
This parameter sets the overload warning level.	Access Rule	Read/Write
	Size	1 byte
	Group	Advanced Setup
	Units	% Thermal Utilization
	Min. Value	0
	Max. Value	100
	Default Value	90

Jam Inhibit Time	**Index No.**	**13**
This parameter defines the amount of time for which jam detection is inhibited during a motor starting sequence.	Access Rule	Read/Write
	Size	1 byte
	Group	Advanced Setup
	Units	Seconds
	Min. Value	0
	Max. Value	250
	Default Value	10

Jam Trip Delay	**Index No.**	**14**
This parameter allows the installer to program a time duration for which a jam condition must exist at the programmed level prior to the device tripping.	Access Rule	Read/Write
	Size	1 byte
	Group	Advanced Setup
	Units	Seconds
	Min. Value	0.5
	Max. Value	25.0
	Default Value	5.0

Jam Trip Level	**Index No.**	**15**
This parameter sets the jam trip level.	Access Rule	Read/Write
	Size	2 bytes
	Group	Advanced Setup
	Units	% FLA
	Min. Value	150
	Max. Value	600
	Default Value	250

Jam Warn Level	**Index No.**	**16**
This parameter sets the jam warning level.	Access Rule	Read/Write
	Size	2 bytes
	Group	Advanced Setup
	Units	% FLA
	Min. Value	100
	Max. Value	600
	Default Value	150

UL Inhibit Time	**Index No.**	**17**
This parameter defines the amount of time for which underload detection is inhibited during a motor starting sequence.	Access Rule	Read/Write
	Size	1 byte
	Group	Advanced Setup
	Units	Seconds
	Min. Value	0
	Max. Value	250
	Default Value	10

UL Warn Level	**Index No.**	**18**
This parameter sets the underload warning level.	Access Rule	Read/Write
	Size	1 byte
	Group	Advanced Setup
	Units	% FLA
	Min. Value	30
	Max. Value	100
	Default Value	70

Reset/Lock Group

Trip Reset	**Index No.**	**19**
This parameter provides the user with the capability of resetting a trip over the PROFIBUS network. After a trip is reset, the parameter automatically returns to a "Ready" state.	Access Rule	Read/Write
	Size	1 byte
	Group	Reset/Lock
	Units	—
	Min. Value	0 = Ready
	Max. Value	1 = Reset Trip
	Default Value	0

Program Lock	**Index No.**	**20**
This parameter prohibits the device parameters from being altered when set to "Locked". It must be set to "Unlocked" to allow parameter modification.	Access Rule	Read/Set
	Size	1 byte
	Group	Reset/Lock
	Units	—
	Min. Value	0 = Unlocked
	Max. Value	1 = Locked
	Default Value	0

Set To Defaults	**Index No.**	**21**
This parameter allows the user to reset the parameter settings to the factory default values. After parameter values have been reset to the factory default settings, the parameter automatically returns to a "Ready" state.	Access Rule	Read/Write
	Size	1 byte
	Group	Reset/Lock
	Units	—
	Min. Value	0 = Ready
	Max. Value	1 = Reset Defaults
	Default Value	0

I/O Setup Group

OutA Pr FltState	**Index No.**	**22**
This parameter, in conjunction with parameter 23, defines how Output A will respond when a trip occurs. When set to "1", Output A will continue to operate as commanded via the network. When set to "0", Output A will open or close as determined by the setting of parameter 23.	Access Rule	Read/Write
	Size	1 byte
	Group	I/O Setup
	Units	—
	Min. Value	0 = Go To FltValue (#23)
	Max. Value	1 = Ignore Fault
	Default Value	0

OutA Pr FltValue	**Index No.**	**23**
This parameter determines the state that Output A assumes when a trip occurs and Parameter 22 is set to "0".	Access Rule	Read/Write
	Size	1 byte
	Group	I/O Setup
	Units	—
	Min. Value	0 = Open
	Max. Value	1 = closed
	Default Value	0

OutA Pb FltState	**Index No.**	**24**
This parameter, in conjunction with Parameter 25, defines how Output A will respond when a PROFIBUS network fault occurs. When set to "1", Output A will hold the state prior to PROFIBUS fault occurrence. When set to "0", Output A will open or close as determined by the setting of Parameter 25.	Access Rule	Read/Write
	Size	1 byte
	Group	I/O Setup
	Units	—
	Min. Value	0 = Go To FltValue (#25)
	Max. Value	1 = Hold Last State
	Default Value	0

OutA Pb FltValue	**Index No.**	**25**
This parameter determines the state that Output A assumes when a PROFIBUS network fault occurs and Parameter 24 is set to "0".	Access Rule	Read/Write
	Size	1 byte
	Group	I/O Setup
	Units	—
	Min. Value	0 = Open
	Max. Value	1 = Closed
	Default Value	0

OutA Pb IdlState	**Index No.**	**26**
This parameter, in conjunction with parameter 27, defines how Output A will respond when the PROFIBUS network is idle. When set to "1", Output A will hold the state prior to PROFIBUS fault occurrence. When set to "0", Output A will open or close as determined by the setting in Parameter 27. The Pb Flt parameters supersede the Pb Idl parameters.	Access Rule	Read/Write
	Size	1 byte
	Group	I/O Setup
	Units	—
	Min. Value	0 = Go To IdlValue (#27)
	Max. Value	1 = Hold Last State
	Default Value	0

OutA Pb IdlValue	**Index No.**	**27**
This parameter determines the state that Output A assumes when the network is idle and parameter 26 is set to "0".	Access Rule	Read/Write
	Size	1 byte
	Group	I/O Setup
	Units	—
	Min. Value	0 = Open
	Max. Value	1 = Closed
	Default Value	0

IN1 Assignment	**Index No.**	**28**
This parameter allows the user to assign a specific function to the discrete IN1 input.	Access Rule	Read/Write
	Size	1 byte
	Group	I/O Setup
	Units	—
	Min. Value Max. Value	0 = Normal 1 = Trip reset 2 = OL Contact
	Default Value	0

IN2 Assignment	**Index No.**	**29**
This parameter allows the user to assign a specific function to the discrete IN2 inputs.	Access Rule	Read/Write
	Size	1 byte
	Group	I/O Setup
	Units	—
	Min. Value Max Value	0 = Normal 1 = Trip Reset 2 = OL Contact
	Default Value	0

Trip History Group

Trip Log 0	**Index No.**	**30**
This parameter records the latest trip.	Access Rule	Read
	Size	2 byte
	Group	Trip History
	Units	—
	Min. Value	See Trip Status table
	Max. Value	See Trip Status table
	Default Value	None

Trip Log 1	**Index No.**	**31**
This parameter records the trip previous to Trip Log 0.	Access Rule	Read
	Size	2 bytes
	Group	Trip History
	Units	—
	Min. Value	See Trip Status table
	Max. Value	See Trip Status table
	Default Value	None

Trip Log 2	**Index No.**	**32**
This parameter records the trip previous to Trip Log 1.	Access Rule	Read
	Size	2 bytes
	Group	Trip History
	Units	—
	Min. Value	See Trip Status table
	Max. Value	See Trip Status table
	Default Value	None

Trip Log 3	**Index No.**	**33**
This parameter records the trip previous to Trip Log 2.	Access Rule	Read
	Size	2 bytes
	Group	Trip History
	Units	—
	Min. Value	See Trip Status table
	Max. Value	See Trip Status table
	Default Value	None

Trip Log 4	**Index No.**	**34**
This parameter records the trip previous to Trip Log 3.	Access Rule	Read
	Size	2 bytes
	Group	Trip History
	Units	—
	Min. Value	See Trip Status table
	Max. Value	See Trip Status table
	Default Value	None

PROFIBUS Setup Group

SSA Node Address	**Index No.**	**35**
This parameter holds the latest node address sent by the Set Slave Address telegram. This is the node address the slave will start up with after the next power-cycle. **NOTE:** This parameter is added to provide a way to change the node address in the case that the master does not support the SSA service. Normally this parameter does not need to be used.	Access Rule	Read/Write
	Size	1 byte
	Group	PROFIBUS Setup
	Units	—
	Min. Value	0
	Max. Value	126
	Default Value	126

Troubleshooting

Introduction

The purpose of this chapter is to assist in troubleshooting the CEP7 Second Generation PROFIBUS module.

ATTENTION

Servicing energized industrial control equipment can be hazardous. Electrical shock, burns, or unintentional actuation of controlled industrial equipment may cause death or serious injury. For safety of maintenance personnel, as well as other who may be exposed to electrical hazards associated with the maintenance activities, follow the local safety-related work practices (for example, the NFPS 70W, Part II, *Electrical Safety for Employee Workplaces,* in the United States) when working on or near energized equipment. maintenance personnel must be trained in the safety practices, procedures, and requirements that pertain to their respective job assignments. Do not work alone on energized equipment.

ATTENTION

Do not attempt to defeat or override fault circuits. The cause of a fault indication must be determined and corrected before attempting operation. Failure to correct a control system or mechanical malfunction may result in personal injury and/or equipment damage due to uncontrolled machine system operation.

PROFIBUS Modes of Operation

The CEP7 Second Generation PROFIBUS Module has four PROFIBUS modes of operation: Power-up Mode, Run Mode, and Configuration Error Mode.

Power-Up Mode

During power-Up Mode, the *NETWORK STATUS* LED should flash green for approximately 1/4 second, then red for 1/4 second.

IMPORTANT

The CEP7 Second Generation PROFIBUS Module protection functions are still operational even without an established network connection.

If the power-up is successful, the overload relay will enter *Run Mode*.

Run Mode

In *Run Mode*, the CEP7 Second Generation PROFIBUS Module will operate as a slave device to a master device. The *NETWORK STATUS* LED will blink green if the PROFIBUS interface is in idle mode. When on-line, the *NETWORK STATUS* LED will turn solid green.

In the *Run Mode*, the CEP7 Second Generation PROFIBUS Module will:

- Exchange Cyclic I/O with a master on the PROFIBUS network.
- Respond to Acyclic (DP-V1) read- and write- services

If a communication error is detected, the CEP7 Second Generation PROFIBUS Module will either enter the *Configuration Error Mode*.

Configuration Error Mode

In this mode, the CEP7 Second Generation PROFIBUS Module's *NETWORK STATUS* LED flashes red at 1Hz.

Error Type	Description	LED State
Configuration Error	Configuration fault or parameter fault	Flashing Red (1Hz)

Fatal Error Mode

In *Fatal Error Mode*, the CEP7 Second Generation PROFIBUS Module's *NETWORK STATUS* LED turns solid red. The overload relay continues in this state as long as the device is powered.

The only way to recover from this mode is to power-cycle the module.

Error Type	Description	LED State
Fatal	Power-up initialization failure	Solid Red
	Fatal communication error	

PROFIBUS Troubleshooting Procedures

Network Status LED

The following table identifies possible causes and corrective actions when troubleshooting PROFIBUS-related failures using the *NETWORK STATUS* LED.

Table 4.4 Troubleshooting using NETWORK STATUS LED

Color	State	Possible Cause	Corrective Action
None	-	1. The CEP7 Second Generation PROFIBUS Module is not receiving power at the PROFIBUS connector. 2. The module is off-line	Check power and PROFIBUS cable connections.
Green Red Off	Flashing (once)	Normal operating state; The CEP7 Second Generation PROFIBUS Module is performing internal initialization procedures.	No action required; the Network Status LED flashes green-red-off during a normal power-up sequence.
Green	Flashing (1Hz)	Normal operating state; CEP7 Second Generation PROFIBUS Module is in idle state.	No action required.
Green	Solid	Normal operating state; the CEP7 Second Generation PROFIBUS Module is on-line.	No action required.
Red	Flashing (1Hz)	1. Configuration fault 2. Parameter fault	Correct the configuration and restart the PROFIBUS master.
Red	Solid	A fatal error has occurred in the module.	Cycle power to the unit and network. If the fault still exists, replace unit.
Red	Lit 1s then off	Major internal fault	Cycle power to the unit and network. If the fault still exists, replace unit. If the problem persists, contact technical support.

DP-V1 Error Codes

The following table lists PROFIBUS DP-V1 error codes, possible causes, and corrective actions.

Table 4.5 Troubleshooting by DP-V1 Error Code

DP-V1 ErrorCode1	DP-V1 Read	DP-V1 Write	Possible Cause	Corrective Action
0xA0 (Read Error)	X		Read access to paramater, which could not be retrieved (e.g. EEPROM error)	-
0xA1 (Write Error)		X	Write access filed (e.g. due to EEPROM error)	-
0xB0 (Invalid Index)	X	X	Accessing a non-existing parameter.	Correct the Index in the service request and retry.
0xB1 (Write Length Error)		X	Write access with incorrect amount of data supplied.	Correct the number of bytes in the service request and retry.
0xB5 (State Conflict)		X	Write access to a parameter currently being locked with the parameter lock.	If applicable, unlock the parameter and retry.
0xB7 (Invalid Range)		X	The value in the service request was outside the specified range.	Correct the value in the service request and retry.
0xC0 (Read constrain conflict)		X	The length in the request doesn't match the actual size of the parameter.	The length in the request doesn't match the actual size of the parameter.
0xC1 (Write constrain conflict)		X	Write access to a read-only parameter.	
0xC3 (Resource Busy)		X	Write acces to a parameter mapped as Cyclic I/O	-

Input and Output Troubleshooting Procedures

The following table lists problems related to the on-board inputs and outputs, possible causes, and corrective actions.

Table 4.6 Input and Output Troubleshooting Procedures

Failure Type	Failure Description	Corrective Action
Input 1, 2	Input 1 or 2 does not appear to recognize a contact closure	1. Check the supply voltage 2. If the applicable contact closed but the CEP7 Second Generation PROFIBUS Module Input does not recognize the closure, check the continuity and wiring to the connected contact. 3. Measure the voltage across and current through the applicable input. Verify they are within the ratings of the CEP7 Second Generation PROFIBUS Module (See Appendix A). 4. Check the programmable controller ladder logic and I/O mapping.
Input 1, 2	Trip reset operation	Check the programming of Parameter 28, *IN1 Assignment* or Parameter 29, *IN2 Assignment*.

Table 4.6 Input and Output Troubleshooting Procedures (Continued)

Failure Type	Failure Description	Corrective Action
OUT A	Output A does not appear to turn on (close) when commanded to do so.	1. Check the supply voltage 2. Check the programmable controller ladder logic and I/O mapping. 3. Remove the control circuit power and check for continuity across the appropriate output terminals (13/14). If the continuity test indicates the output is open, replace the CEP7 Second Generation PROFIBUS Module. Check the supply voltage against the ratings of the contactor and the relay output before installing a new unit. 4. Remove control circuit power and check the control circuit fuse and the control wiring to the CEP7 Second Generation PROFIBUS Module output terminals. 5. Check the control circuit power supply. Verify the voltage is within the contactor and overload relay ratings. 6. Check the *DEVICE STATUS* and *TRIP STATUS* parameters. If a Protection Fault exists, refer to the *Trip and Warning* troubleshooting procedure. If a PROFIBUS-related fault exists, refer to the *PROFIBUS* troubleshooting procedure. 7. Check the OUTA Pr FltState, Pr FltValue, Pb FltState, Pb FltValue, Pb IdlState, and Pb IdlValue programmable parameters. The Pr FltState and Pr FltValue parameter supersede the Pb Flt or Pb Idle parameters.
OUT A	Output A does not appear to turn off (open) when commanded to do so.	1. Check the programmable controller ladder logic and I/O mapping. 2. Remove the control circuit power and check for continuity across the appropriate output terminals (13/14). If the continuity test indicates the output is closed, replace the CEP7 Second Generation PROFIBUS Module. Check the supply voltage against ratings of the contactor and the relay output before installing a new unit. 3. Remove control circuit power and check the control circuit fuse and the control wiring to the CEP7 Second Generation PROFIBUS Module output terminals. 4. Check the OUTA Pr FltState, Pr FltValue, Pb FltState, Pb FltValue, Pb IdlState, and Pb IdlValue programmable parameters. Then check the *DEVICE STATUS* and *TRIP STATUS* parameters. If a Protection Fault exists, refer to the *TRIP STATUS* parameters. If a Protection fault exists, refer to the *Trip and Warning* troubleshooting procedure. If a PROFIBUS-related fault exists, refer to the *PROFIBUS* troubleshooting procedure.
OUT A	The contactor connected to Output A appears to "chatter"	1. Check the programmable controller's ladder logic program. 2. Check the control circuit supply voltage. Verify it is within the ratings of the contactor coil and the overload relay's outputs. 3. Remove the control circuit power. Verify all control wiring is properly secured.

Trip and Warning Troubleshooting Procedures

The following table lists the possible causes for each trip type and the recommended action to take.

Table 4.7 Trip/Warn LED Troubleshooting Procedures

Overload	1. Motor overloaded 2. Improper setting	1. Check and correct source of overload (load, mechanical transmission components, motor bearings). 2. Set FLA dial and trip class to match the motor and application requirements.
Phase Loss	1. Missing supply phase 2. Poor electrical connection 3. Contactor operation 4. Improper device type	1. Check for open line (i.e. blown fuse). 2. Check all power terminations from the branch circuit-protecting device down to the motor for proper tightness. Ensure that the overload connection to the contactor is secure. 3. Inspect contactor for proper operation. 4. CEP7S is required for single-phase applications.
Jam	1. Motor current has exceeded the programmed jam level 2. Improper parameter settings	1. Check for the source of the jam (i.e. excessive load or mechanical transmission component failure). 2. Parameter 15, *Jam Trip Level*, is set too low for the application. Check to ensure that the FLA dial is set correctly.

Specifications

Terminal Ratings:		
Terminal Screw		M3
Wire Cross Section		See wiring diagram section
Torque		0.5…0.6 N•m (4.4…5.3 lb.-in)
Degree of Protection		IP20
Power Supply Ratings:		
Rated Supply Voltage	*Us*	24V DC
Rated Operating Range	*Ue*	20.4 - 26.4
Rated Supply Current	*Ie*	0.1 A
Maximum Surge Current at Power-Up		2.5 A
Maximum Power Consumption		2.5 W
Maximum Power Interruption Time		0.5ms
Output Relay Ratings:		
Terminals OUT A:		 13/14
Type of Contacts		Form A SPST - NO
Rated Thermal Current	I_{the}	5 A
Rated Insulation Voltage	*Ui*	300V AC
Rated Operating Voltage	*Ue*	240V AC
Rated Operating Current	*Ie*	3 A (at 120V AC), 1.5 A (at 240V AC) 0.25 A (at 110V DC), 0.1 A (at 220V DC)
Minimum Operating Current		10 mA at 5V DC
Rating Designation		B300
Utilization Category		AC-15
Resistive Load Rating (p.f.=1.0)		5 A, 250V AC 5 A, 30V DC
Inductive Load Rating (p.f.=0.4), (L/R=7 ms)		2 A, 250V AC 2 A, 30V DC
Short Circuit Current Rating		1,000 A
Recommended Control Circuit Fuse		KTK-R-6 (6 A, 600V)
Rated Number of Operations Out A: W/100-C-09…100-C43 W/100-C-60…100-C85 W/NEMA Size 0…2 W/NEMA Size 3		 5,000,000 2,500,000 1,000,000 300,000
Input Ratings:		
Terminals IN 1: IN 2: SSV (Sensor Supply Voltage)		 1 2 3
Supply Voltage (provided by module)		20.4 - 26.4V DC

Type of Inputs	Current Sinking
ON-State Voltage	15V DC
On-State Current (turn-on)	15 mA
Steady State Current	15 mA
Off-State Voltage	5 VDC
Off-State Current	0.5 mA
Transition Voltage	5... 15 VDC
Transition Current	0.5... 15mA
Environmental Ratings:	
Ambient Temperature *Tamb* Storage Operating (Open) (Enclosed)	 -40…+85°C (-40…+185°F) -20…+60°C (-4…+140°F) -20…+40°C (-4…+104°F)
Humidity Operating Damp Heat - Steady State Damp Heat - Cyclic	 5…95% non-condensing per IEC 68-2-3 per IEC 68-2-30
Cooling Method	Natural Convection
Vibration (per IEC 68-2-6)	3 G
Shock (per IEC 68-2-27)	30 G
Maximum Altitude	2000 m
Pollution Environment	Pollution Degree 2
Terminal Marking	EN 50012
Degree of Protection	IP20
Electromagnetic Compatibility	
Electrostatic Discharge Immunity Test Level Performance Criteria	 8 kV Air Discharge 4 kV Contact Discharge 1(1)(2)
Radiated RF Immunity Test Level Performance Criteria	 10V/m 1(1)(2)
Electrical Fast Transient/Burst Immunity Test Level Performance Criteria	 2 kV (Power) 1 kV (control) 1(1)(2)
Surge Immunity Test Level Performance Criteria	 2 kV L-E 1 kV L-L 1(1)(2)
Radiated Emissions	Class A
Conducted Emissions	Not tested

WARNING

This is a class A product. In domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

PROFIBUS Communications:	
Baud Rate	9.6 k, 19.2 k, 45.45 k, 93.75 k, 187.5 k, 500 k, 1.5 M, 3 M, 6 M, 12 M
Auto-Baud Rate identification	Yes

DP-V0 (Cyclic data exchange)	Yes
DP-V1 (Acyclic services)	Yes
DP-V2 (Acyclic services)	No
Set SIave Address (SSA) support	Yes
Jam Protection:	
Trip Level	150…600% FLA
Trip Delay	0.1…25.0 sec.
Inhibit	0…250 sec.
Standards	
UL 508	
CSA 22.2, No. 14	
EN 60947-4-1	

(1) Performance Criteria 1 requires the DUT (device under test) not to experience degradation or loss of performance.

(2) Environment 2 - Heavy Industrial.

PROFIBUS Information

Structure of the "Set Prm Data"-telegram

During startup of the network, it is possible to force start-up values for all writable parameters through the User Prm Data. The module will use the settings provided that the "Parameter Initialization"-setting (User Prm Data byte #3) is set as "Enabled". Note that this will result in any previous settings to be replaced by the settings from the User Prm Data.

Table B.5 Structure of the "Set Prm Data"-telegram

Byte no.	Name	Description
0-2	DP-V1 standard bytes	-
3	Parameter Initialization	Enables/Disables initialization of parameters via parameterization data. 1= Enabled 0= Disabled
4-5	Trip Enable	Initial value for parameter 8, *Trip Enable*
6-7	Warning Enable	Initial value for parameter 9, *Warning Enable*
8	Single/Three Ph	Initial value for parameter 10, *Single/Three Ph*
9	OL Reset mode	Initial value for parameter 11, *OL Reset mode*
10	OL Warning Level (%Therm. Util.)	Initial value for parameter 12, *OL Warning Level*
11	Jam Inhibit Time (1s)	Initial value for parameter 13, *Jam Inhibit Time*
12	Jam Trip Delay (0.1s)	Initial value for parameter 14, *Jam Trip Delay*
13-14	Jam Trip Level (%FLA)	Initial value for parameter 15, *Jam Trip Level*
15-16	Jam Warn Level (%FLA)	Initial value for parameter 16, *Jam Warn Level*
17	UL Inhibit Time (1s)	Initial value for parameter 17, *UL Inhibit Time*
18	UL Warn Level (%FLA)	Initial value for parameter 18, *UL Warn Level*
19	Program Lock	Initial value for parameter 20, *Program Lock*
20	OutA Pr State/Value	Bit 0: Initial value for parameter 22, *OutA Pr FltState* Bit 1: Initial value for parameter 23, *OutA Pr FltValue* (Other bits: Not used, Must be set to 0)
21	OutA Pb State/Value	Bit 0: Initial value for parameter 24, *OutA Pb FltState* Bit 1: Initial value for parameter 25, *OutA Pb FltValue* (Other bits: Not used, Must be set to 0)
22	OutA Pb IdlState/Value	Bit 0: Initial value for parameter 26, *OutA Pb IdlState* Bit 1: Initial value for parameter 27, *OutA Pb IdlValue* (Other bits: Not used, Must be set to 0)
23	IN1 Assignment	Initial value for parameter 28, *IN1 Assignment*
24	IN2 Assignment	Initial value for parameter 29, *IN2 Assignment*

Electronic Data Sheet

Electronic data sheet (GSD) files are specially formatted ASCII files that provide all of the information necessary for a PROFIBUS configuration tool to access and alter the parameters of a device. The GSD file contains all the parameter information of a device: number of parameters, groupings, parameter name, min, max, and default values, units, data format and

scaling. The GSD file for the CEP7 Second Generation PROFIBUS Module is available from the Internet at www.ab.com/networks/gsd/.

Set Slave Address

The PROFIBUS Module supports the Set Slave Address (SSA) service, which can be used to specify the node address from the PROFIBUS Master.

If successful, the new node address will be stored in non volatile memory, replacing the previous value of parameter 35, *SSA Node Address*.

NOTE: This service will be rejected if a previous SSA service request has specified that no further changes should be allowed, or if the PROFIBUS Module is in Data Exchange.

Supported Baud Rates

The PROFIBUS Module detects the baud rate automatically, and supports all standard baud rates.

Supported baud rates:

- 9.6kbps
- 19.2kbps
- 45.45kbps
- 93.75kbps
- 187.5kbps
- 500kbps
- 1.5Mbps
- 3Mbps
- 5Mbps
- 12Mbps

PROFIBUS Identity

The module has the following identity on PROFIBUS:

PI Identification Number	0x0AC7
Vendor Name	Sprecher + Schuh
Model Name	"CEP7-EPRB"

Identification and Maintenance (I&M)

Identification & Maintenance (I&M) provides a standard way of gathering information about an I/O device. The intention is to help the end-user in maintenance of the product.

The module features the following I&M records:

Table B.6 IM0 Record

Information	Size	Default Value
Manufacturer ID	2 octets	0x0002
Order ID	20 octets	CEP7-EPRB
Serial Number	16 octets	(assigned during manufacturing)
Hardware Revision	2 octets	(assigned during manufacturing)
Software Revision	4 octets	(assigned during manufacturing)
Revision Counter	2 octets	0x0000
Profile ID	2 octets	0xF600

Table B.6 IM0 Record

Information	Size	Default Value
Profile Specific Type	2 octets	0xF600
IM Version	2 octets	0x0101
IM Supported	2 octets	0x001E

Table B.7 IM1 Record

Information	Size	Default Value
Tag Function	32 octets	Blank (0x20)
Tag Location	22 octets	Blank (0x20)

Table B.8 IM2 Record

Information	Size	Default Value
Installation Date	16 octets	Blank (0x20)

Table B.9 IM3 Record

Information	Size	Default Value
Descriptor	54 octets	Blank (0x20)

Notes:

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